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(54) **CONFERENCE CABINETS**
KONFERENZGESTELL
SUPPORT DE PRESENTATION POUR CONFERENCE

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EP-A- 0 546 462 **SE-B- 433 292**
US-A- 3 659 355

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Description

Technical field

[0001] The present invention relates to conference cabinets, more particularly to a device for moving and tilting a board, such as a support for flip-over pads, relative to a second board in a conference cabinet.

Prior art

[0002] Conference cabinets generally include a plane rectangular board with a writing surface, which board has a surrounding frame of a certain width. The frame must have said width for the cabinet to contain, in the closed condition, flip-over pad, drawing and writing material, as well as any other writing and wipeable surfaces and other units. The writing surface may be of so called whiteboard type which is magnetic and on which it is possible to use felt pens or the like and which can be wiped clean using ordinary so called dusters. The conference cabinets are provided with one or two doors, which on the inside are equipped with flip-over pad and/or a further wipeable writing surface. Further, the conference cabinets are sometimes provided with screens which may be drawn for the projection of, for instance, transparencies. The conference cabinets may be mounted to a wall or may be provided with a support for positioning anywhere in a room.

[0003] The known flip-over pad supports form part of the inside of a door of the conference cabinet, like in a conference cabinet called Expanda 801 which is marketed by Diafax AB, where apart from the support, the door consists of a frame and where the support carries the flip-over pad. This conference cabinet is also made the subject to the Swedish patent SE-B-433 292. The frame is of the same thickness as the support and fits tightly around the entire support when this is not tilted. On its vertical inner sides facing the support, the frame has vertical grooves. In the upper portion of the vertical sides facing the frame, the support is provided with pins. A stop bar is disposed in the lower portion of said vertical sides of support and frame. The stop bar is attached to both support and frame and under it there is a stop disposed for completion of tilting. Along the lowermost horizontal side of the support and frame there are retaining means arranged to lock the support to the frame when the pad is not in use. This is done to ensure that the support is not tilted when retracted into the conference cabinet. On the support there is also a handle to be used during the tilting operation.

[0004] In order to open the known conference cabinet and take out the flip-over pad for use, the following should be done. First you grip the door and position it obliquely relative to the wipeable writing surface in a semi-circular or partially circular movement. You then release the retaining means, grip the handle and pull the support downwards obliquely against yourself. During

this movement the pins are displaced downwardly in the grooves until they are stopped when the stop bar has reached its lowermost position. The stop bar is then brought from a vertical orientation to a substantially horizontal orientation, whereby the support is tilted. The angle of the support relative to the frame behind it is dependent on the length of the bar.

[0005] In order to use the flip-over pad and turn over the leaves to find the right one, you move the leaf or leaves overlying the leaf you wish to look at or write on over the upper horizontal side of the support such that leaves you do not want will be hanging over the edge of the support. If there is a frame around the support you thus have to move these leaves over the support side but under the frame.

[0006] This method of taking out and tilting the flip-over pad support is both unnecessarily complicated and time-consuming and requires too many movements. Further, it is difficult to turn over the leaves of the pad since the frame may be in the way and you may get hurt if turning the leaves rapidly.

Description of the invention

[0007] The object of the invention is to provide a flip-over pad support which in a single movement may be moved from its parking position adjacent and parallel to the wipeable writing surface into its working position tilted relative to the wipeable writing surface.

[0008] Another object is to provide a flip-over pad support which is not surrounded by a frame so as to facilitate turning over the leaves of the pad.

[0009] These objects are solved by the features of independent claim 1. Preferred embodiments of the invention are described by the dependent claims.

Description of the figures

[0010]

Fig. 1 is a front view of a conference cabinet in a configuration according to a preferred embodiment of the invention, showing the flip-over pad support in the retracted position, its extended position being shown in broken line,

Fig. 2 is a side view of the conference cabinet seen from above showing the flip-over pad support in its extended position, its retracted position being shown in broken line,

Fig. 3 is a side view of the conference cabinet seen from the left in Fig. 1 with the flip-over pad support in the parking position,

Fig. 4 is a side view of the conference cabinet seen from the right in Fig. 1 with the flip-over pad support in the extended position,

Fig. 5 is a side view of fastening elements and hinge means in the conference cabinet, for the flip-over pad support in the retracted position,

Fig. 6 is a side view seen from above of fastening elements and hinge means in the conference cabinet, for the flip-over pad support in the extended position,

Fig. 7 is a side view seen from above of fastening elements and hinge means in the conference cabinet, for the flip-over pad support in the extended position,

Fig. 8 is a side view of fastening elements and hinge means in the conference cabinet, for the flip-over pad support in the retracted position, seen from the right in Fig. 1, and

Fig. 9 is a side view of fastening elements and hinge means in the conference cabinet, for the flip-over pad support in its extended position, seen from the left in Fig. 1.

Preferred embodiment

[0011] In Figure 1 there is depicted a conference cabinet from the front according to a preferred embodiment of the invention. The conference cabinet consists of a board 10 having a wipeable writing surface made of, for example, whiteboard, and surrounded by a frame 12 of a certain thickness. The important thing about the frame 12 is that its thickness is selected so as for the writing surface 10, a board 14 with a flip-over pad and any other accessories such as writing materials, fastening magnets 16, a projection screen and the like to be included in the frame 12, if required, when the conference cabinet is not in use, i.e. is in its parking position.

[0012] In Fig. 1 there is also shown the board 14 which provides a support for a flip-over pad, where the flip-over pad is attached to the upper horizontal edge of the board 14 on the surface remote from the wipeable writing surface of the first board 10 (not shown). The support board 14 is shown in the retracted and extended position respectively, the latter position also being called working position and shown in broken line. To the right in Figure 1 the support board 14 is parked in the frame 12 and to the left it is extended beside it. The support board 14 is attached to the frame 12 by means of an armlike connection means 18 which at one end is attached to the support board 14 by a fastening element 20 and a hinge means 22, and at the other end is attached to the frame 12 by a second fastening element 24 and a second hinge means 26. The hinge means 22, 26 may be, for example, coupling bolts. When the support board 14 is retracted, the connection means 18, the first fastening element 20 and the first coupling bolt 22 are located between the two boards 10 and 14 and are therefore shown in broken line. In the extended position of the support board 14, a portion of the connection means 18, the entire first fastening element 20 and the first coupling bolt 22 are located behind the support board 14, and are therefore shown in broken line here too. In the Figure, there is also shown a magnet 16 attached to the support board 14, which magnet in the parking position holds

the support board 14 against the writing surface 10 and in the working position holds the support board 14 against the connection means 18.

[0013] In Figure 2 there is shown the movement of the support board 14 from the parking position to the working position. To carry out said movement you grip the support board 14 by its vertical sides 28 and pull it straight out towards yourself and then move it towards the left in a single movement. On said movement of the support board 14, the connection means 18, which is L-shaped, is turned around a rotation axis 30 extending through the longitudinal axis of the second coupling bolt 26, and the support board 14 will turn around a rotation axis 32 extending through the longitudinal axis of the first coupling bolt 22, so that the support board 14 will assume the extended position. The support board 14 will then describe a semi-circular path shown in broken line in Figure 2. During said movement, the front 33 of the support board 14 will be remote from the writing surface 10 the whole time.

[0014] Figures 3 and 4 show the conference cabinet with the support board 14 in parking position and extended position, respectively. In Figure 3 the cabinet is shown from the left and in Figure 4 from the right. In the figures, there is shown the two axes 30 and 32 around which the support board 14 and the connection means 18 are turned. The second axis 30 is vertical and the first axis 32 is inclined at an angle α relative to the vertical plane and the surface 10. Thus, on turning of the support board 14 from the parking position to the extended position, the support board turns around the first tilted axis 32 so as to make in the entirely extended position a double angle 2α relative to the axis 30. The support board 14 should always be turned fully (180°) around the first tilted axis 32 in order to achieve the correct angle 2α relative to the axis 30 and in order for the lower edge of the support board 14 always to be horizontal. However, the turning of the connection means 18 around the second vertical axis may be varied.

[0015] Figures 5 - 9 show the fastening elements 20 and 24 and the coupling bolts 22 and 26 of the device according to the invention. Figure 5 is a side view from the front of the second coupling bolt 26, the second fastening element 24, the connection means 18 and the first fastening element 20 in the parking position, and Figure 6 shows the same thing but in a side view from above showing the first coupling bolt 22 also. It is evident from the figures that the fastening elements 20 and 24 have plane vertical portions 36 and 38 which are attached to the support board 14 and the frame 12 respectively and from each such portion 36, 38 two substantially triangular portions 40 and 42 provided with holes protrude perpendicularly and horizontally. Further, it is evident from the figures that the respective ends of the connection means 18 may be inserted in the spaces defined by said portions. The ends of the connection means 18 are provided with holes too, such that a coupling bolt 22 or 26 may connect an end of the connection

means 18 with a fastening element 20 or 24. Further, in Figure 6 there is shown an adjustment screw 34, the function of which will be explained below. As may be seen from Figures 5 and 6, the connection means 18 is arranged to turn around the coupling bolt 26 in the second fastening element 24, and the support board 14, which is attached with its rear side (not shown) against the plane vertical portion 36 of the first fastening element 20, is arranged to turn around the first axis 32 through the coupling bolt 22.

[0016] Figure 7 shows the corresponding means from Figure 6 seen from above, for the support board 14 in the extended position. As may be seen from the figure, the first fastening element 20 is tilted, where the position of the first coupling bolt 22 at the underside of the fastening element 20 is shown in a broken circle. It is evident from the broken lines and from the fact that its plane vertical portion 36 is partly visible in this figure that the fastening element 20 is tilted. This figure shows the function of the adjustment screw 34. It seems to it that the connection means 18 and therefore the support board 14 are not extended more than required. The object of the same it to limit the turning angle of the connection means 18 such that the support board 14 may be oriented towards the centre of the room in which the conference cabinet is placed.

[0017] Figure 8 is a side view of fastening elements 20 and 24 and coupling bolts 22 and 26 together with the connection means 18 seen from the right in Figure 1. The support board 14 here is inserted (not shown) and has its rear side attached to the plane vertical portion 36 of the first fastening element 20. Said portion 36 is parallel to the plane of the wipeable writing surface 10 (not shown). It clearly appears that the coupling bolt 22 is tilted relative to the rotation axis 30 and relative to the plane vertical portion 36 of the first fastening element 20, and the rotation axis 32 extending through the longitudinal axis of the coupling bolt 22. Also shown is the second fastening element 24 and the vertically oriented coupling bolt 26. It is also evident from the figure that the connection means 18 has partly angled end surfaces at the end attached to the first fastening element 20 with the tilted coupling bolt 22 and that the protruding triangular portions 42 of the first fastening element 20 are also partly angled, where the angled portions of the respective means have been angled such that said portions are perpendicular to the tilted rotation axis 32.

[0018] Figure 9 shows the first fastening element 20 together with the tilted coupling bolt 22 and the connection means 18, for the extended position of the support board 14, relative to the second rotation axis 30, seen from the left in Figure 1. Thus, moving of the support board 14 into the extended position turns the connection means 18 around the rotation axis 30 and the first fastening element 20 (support board) around the tilted rotation axis 32 such that the rotation axis 32 has changed its inclination relative to the writing surface 10. This means that the support board 14 is tilted relative to the

wipeable writing surface 10.

[0019] While only one embodiment of the invention has been described, the invention is not to be considered limited to said embodiment. Further, it is possible to have a second writing surface such as a cabinet door covering the support board or two cabinet doors opening in opposite directions, one with a flip-over pad support which is tilted on opening and one with a writing board. The support board may also be hung from the opposite side of the document cabinet, i.e. be turned outwards to the right from the document cabinet instead of towards the left by altering the mounting of the tilted coupling bolt. Thus, the invention is to be considered limited by the succeeding claims.

Claims

1. A conference cabinet comprising a first plane board (14) and a second plane board (10), the first plane board (14) in a first position being parallel to and at least partly covering the second plane board (10), the first plane board (14) in a second position being tiltable relative to the second plane board (10), and including a device for moving and tilting the first plane board (14), relative to the second plane board (10), **characterized in that** the device comprises a connection means (18) between the two boards, wherein one end of said connection means (18) is turnably attached to the first plane board (14) around a first axis (32) and the other end of said connection means (18) is turnably attached to or adjacent the second plane board (10) around a second axis (30), the first axis (32) being disposed, in use, vertically between the connection means (18) and the first plane board (14) and the second axis (30) being disposed, in use, vertically between the connection means (18) and the second plane board (10), and wherein the first axis (32) can be tilted at an angle (α) relative to the, in use, vertical plane of the second plane board (10).
2. A conference cabinet according to claim 1, characterized in that the first axis (32) is provided through a hinge consisting of one end of the connection means (18) and a fastening element (20), which are interconnected by a hinge means (22) and the second axis (30) is provided through a hinge consisting of the other end of the connection means (18) and a second fastening element (24) which are interconnected by a second hinge means (26), the first axis (32) extending through the first hinge means (22) and the second axis (30) extending through the second hinge means (26).
3. A conference cabinet according to claims 1 or 2, characterized in that the second board (10) is surrounded by the frame (12) and that the second fas-

tening element (24) is fastened thereto.

4. A conference cabinet according to any of the claims 1 - 3, characterized in that the second board (10) is provided with locking means (16), such as a magnet, and that the second surface (10) is arranged to detachably retain the first board (14) adjacent to itself in the first position and the connection means (18) is arranged to detachably retain the first board (14) adjacent to itself in the second position.

Patentansprüche

1. Konferenzgestell aufweisend eine erste ebene Platte (14) und eine zweite ebene Platte (10), wobei sich die erste ebene Platte (14) in einer ersten Position parallel zur zweiten ebenen Platte (10) befindet und diese zumindest teilweise überdeckt, und die erste ebene Platte (14) in einer zweiten Position gegenüber der zweiten ebenen Platte (10) neigbar ist, und ferner aufweisend eine Vorrichtung zur Bewegung und Neigung der ersten ebenen Platte (14) gegenüber der zweiten ebenen Platte (10), dadurch **gekennzeichnet**, dass die Vorrichtung eine Verbindungseinrichtung (18) zwischen den beiden Platten aufweist, wobei ein Ende der Verbindungseinrichtung (18) drehbar um eine erste Achse (32) an der ersten ebenen Platte (14) befestigt ist und das andere Ende der Verbindungseinrichtung (18) drehbar um eine zweite Achse (30) an oder benachbart zu der zweiten ebenen Platte (10) befestigt ist, wobei die erste Achse (32) sich während der Benutzung in vertikaler Richtung zwischen der Befestigungseinrichtung (18) und der ersten ebenen Platte (14) befindet und die zweite Achse (30) sich während der Benutzung in vertikaler Richtung zwischen der Befestigungseinrichtung (18) und der zweiten ebenen Platte (10) befindet, und wobei die erste Achse (32) während der Benutzung um einen Winkel (α) relativ zur vertikal verlaufenden Ebene der zweiten ebenen Platte (10) geneigt werden kann.
2. Konferenzgestell gemäß Anspruch 1, dadurch **gekennzeichnet**, dass die erste Achse (32) als Scharnier ausgeführt ist, welches aus einem Ende der Verbindungseinrichtung (18) und einem Befestigungselement (20), welche durch eine Scharniereinrichtung (22) miteinander verbunden sind, gebildet ist und dass die zweite Achse (30) als Scharnier ausgeführt ist, welches aus dem anderen Ende der Verbindungseinrichtung (18) und einem zweiten Befestigungselement (24), welche mittels einer zweiten Scharniereinrichtung (26) miteinander verbunden sind, gebildet ist, wobei die erste Achse (32) durch die erste Scharniereinrichtung (22) verläuft und die zweite Achse (30) durch die

zweite Scharniereinrichtung (26) verläuft.

3. Konferenzgestell gemäß Anspruch 1 oder 2, dadurch **gekennzeichnet**, dass die zweite Platte (10) von einem Rahmen (12) umgeben ist und das zweite Befestigungselement (24) an diesem befestigt ist.
4. Konferenzgestell gemäß einem der Ansprüche 1-3, dadurch **gekennzeichnet**, dass die zweite Platte (10) eine Verschlusseinrichtung (16), wie beispielsweise einen Magneten, aufweist und die zweite Oberfläche (10) so ausgeführt ist, dass sie die erste Platte (14) in der ersten Position zu ihr benachbart so aufnehmen kann, dass diese entnehmbar ist und die Verbindungseinrichtung (18) so ausgeführt ist, dass die erste Platte (14) zu ihr benachbart benachbart in einer zweiten Position so aufgenommen werden kann, dass diese entnehmbar ist.

Revendications

1. Support de présentation pour conférence comprenant un premier panneau plan (14) et un deuxième panneau plan (10), le premier panneau plan (14) étant, dans une première position, parallèle au deuxième panneau plan (10) et le recouvrant au moins en partie, le premier panneau plan (14) pouvant, dans une deuxième position, être incliné par rapport au deuxième panneau plan (10), et comprenant un dispositif pour déplacer et incliner le premier panneau plan (14) par rapport au deuxième panneau plan (10), caractérisé en ce que le dispositif comprend des moyens de liaison (18) entre les deux panneaux, dans lesquels une extrémité desdits moyens de liaison (18) est attachée de manière pivotante au premier panneau plan (14) autour d'un premier axe (32) et l'autre extrémité desdits moyens de liaison (18) est attachée de manière pivotante au ou de manière adjacente au deuxième panneau plan (10) autour d'un deuxième axe (30), le premier axe (32) étant, à l'utilisation, disposé verticalement entre les moyens de liaison (18) et le premier panneau plan (14), et le deuxième axe (30) étant, à l'utilisation, disposé verticalement entre les moyens de liaison (18) et le deuxième panneau plan (10), et dans lesquels le premier axe (32) peut être incliné à un angle (α) par rapport au plan vertical, développé à l'utilisation, du deuxième panneau plan (10).
2. Support de présentation pour conférence selon la revendication 1, caractérisé en ce que le premier axe (32) est constitué d'une articulation se composant d'une extrémité des moyens de liaison (18) et d'un élément de fixation (20), qui sont reliés par des moyens formant charnière (22), et le deuxième axe

(30) est constitué d'une articulation se composant de l'autre extrémité des moyens de liaison (18) et d'un deuxième élément de fixation (24) qui sont reliés par des deuxièmes moyens formant charnière (26), le premier axe (32) s'étendant à travers les premiers moyens formant charnière (22) et le deuxième axe (30) s'étendant à travers les deuxièmes moyens formant charnière (26). 5

3. Support de présentation pour conférence selon la revendication 1 ou 2, caractérisé en ce que le deuxième panneau (10) est entouré du cadre (12) et en ce que le deuxième élément de fixation (24) est fixé à celui-ci. 10

4. Support de présentation pour conférence selon l'une quelconque des revendications 1 à 3, caractérisé en ce que le deuxième panneau (10) est pourvu de moyens de verrouillage (16), tel un aimant, et en ce que la deuxième surface (10) est agencée de façon à retenir de manière détachable le premier panneau (14) à côté d'elle dans la première position, et les moyens de liaison (18) sont agencés de façon à retenir de manière détachable le premier panneau (14) à côté d'eux dans la deuxième position. 15 20 25

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Fig. 1

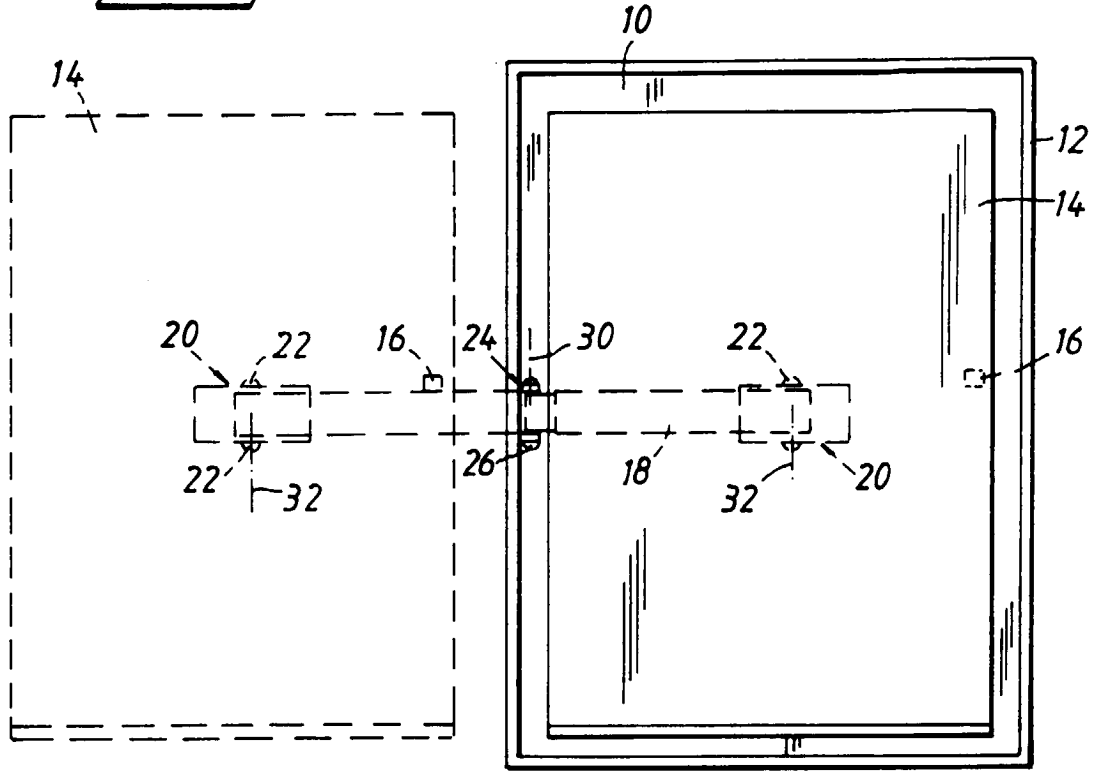


Fig. 2

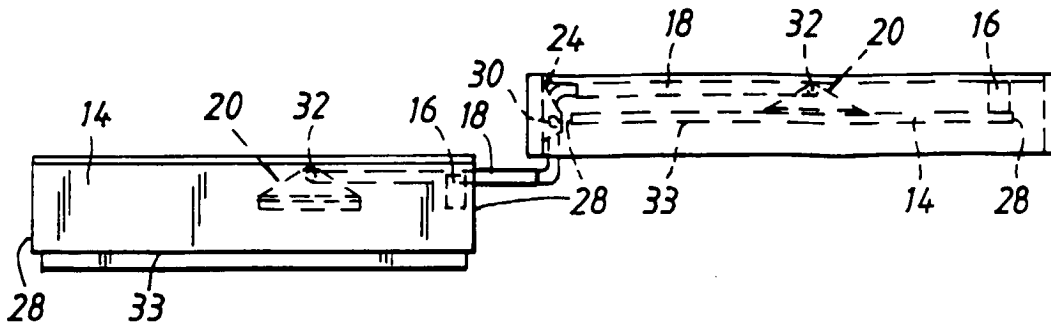


Fig. 3

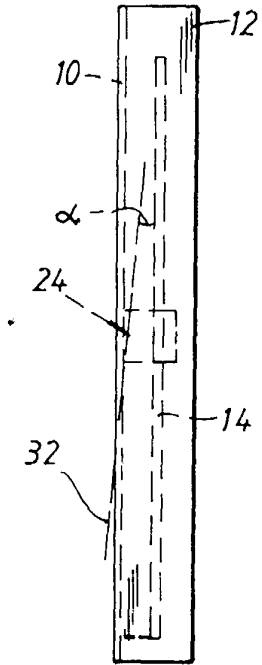


Fig. 4

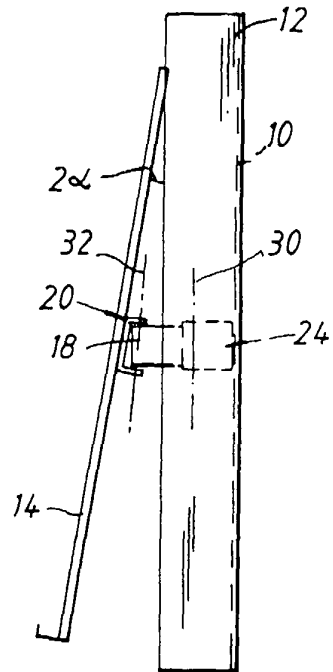


Fig. 5

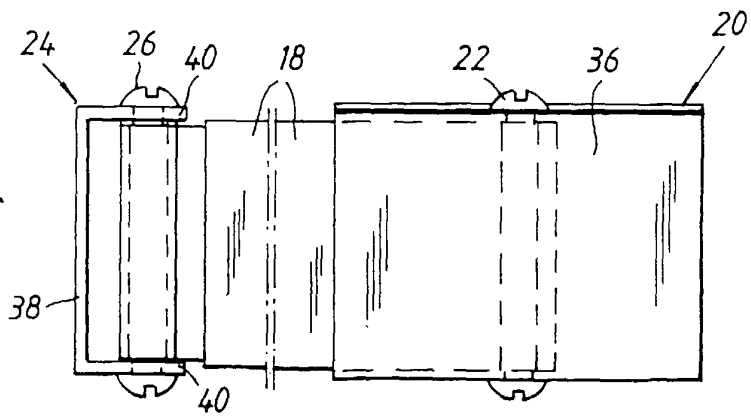


Fig. 6

